EXHIBIT 1

Pharmacies miss half of dangerous drug combinations

By SAM ROE, RAY LONG and KARISA KING
CHICAGO TRIBUNE | DEC 15, 2016

The Tribune reporter walked into an Evanston CVS pharmacy carrying two prescriptions: one for a common antibiotic, the other for a popular anti-cholesterol drug.

Taken alone, these two drugs, clarithromycin and simvastatin, are relatively safe. But taken together they can cause a severe breakdown in muscle tissue and lead to kidney failure and death.

PLAINTIFFS TRIAL EXHIBIT
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When the reporter tried to fill the prescriptions, the pharmacist should have warned him of the dangers. But that's not what happened. The two medications were packaged, labeled and sold within minutes, without a word of caution.

The same thing happened when a reporter presented prescriptions for a different potentially deadly drug pair at a Walgreens on the Magnificent Mile.

And at a Wal-Mart in Evergreen Park, a Jewel-Osco in River Forest and a Kmart in Springfield.

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In the largest and most comprehensive study of its kind, the Tribune tested 255 pharmacies to see how often stores would dispense dangerous drug pairs without warning patients. Fifty-two percent of the pharmacies sold the medications without mentioning the potential interaction, striking evidence of an industrywide failure that places millions of consumers at risk.

CVS, the nation's largest pharmacy retailer by store count, had the highest failure rate of any chain in the Tribune tests, dispensing the medications with no warning 63 percent of the time. Walgreens, one of CVS' main competitors, had the lowest failure rate at 30 percent — but that's still missing nearly 1 in 3 interactions.

In response to the Tribune tests, CVS, Walgreens and Wal-Mart each vowed to take significant steps to improve patient safety at its stores nationwide. Combined, the actions affect 22,000 drugstores and involve additional training for 123,000 pharmacists and technicians.

"There is a very high sense of urgency to pursue this issue and get to the root cause," said Tom Davis, CVS' vice president of pharmacy professional services.

CVS, which filled about 1 billion prescriptions last year, said the company would improve policies and its computer system to "dramatically" increase warnings to patients.

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Walgreens said it would, among other changes, increase training for pharmacists. "We take this very seriously," said Rex Swords, Walgreens' vice president of pharmacy and retail operations and planning.

INVESTIGATIONS

How the Tribune conducted the tests

DEC 14, 2016 AT 11:51 PM

To determine how often area pharmacies would dispense potentially dangerous drug pairs without warning customers, the Tribune launched what would become the pregnancy with a risk of birth defects.

Dangerous drug combinations are a major public health problem, hospitalizing tens of thousands of people each year. Pharmacists are the last line of defense, and their role is growing as Americans use more prescription drugs than ever. One in 10 people take five or more drugs — twice the percentage seen in 1994.

Some pharmacists who were tested got it right, coming to the counter to issue stern warnings. "You'll be on the floor. You can't have the two together," said one pharmacist at a Walgreens on Chicago's Northwest Side. Said a Kmart pharmacist in Rockford: "I've seen people go to the hospital on this combination."

But in test after test, other pharmacists dispensed dangerous drug pairs at a fast-food pace, with little attention paid to customers. They failed to catch combinations that could trigger a stroke, result in kidney failure, deprive the body of oxygen or lead to unexpected

Tribune reporters presented pharmacies with prescriptions for drugs that are known to be harmful or even fatal if taken together, but 52 percent of the time the prescriptions were filled without warning. (E. Jason Wambsgans / Chicago Tribune)

Location didn't matter: Failures occurred in poor neighborhoods on the South Side as well as in affluent suburbs and the Gold Coast. Even the Walgreens at Northwestern Memorial Hospital in downtown Chicago failed its test.

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The newspaper also tested independent pharmacies, many of which take pride in providing personalized care. As a group, they had a higher failure rate than any retail chain, missing risky drug interactions 72 percent of the time. Chains overall failed 49 percent of their tests.

The Tribune study, two years in the making, exposes fundamental flaws in the pharmacy industry. Safety laws are not being followed, computer alert systems designed to flag drug interactions either don't work or are ignored, and some pharmacies emphasize fast service over patient safety. Several chain pharmacists, in interviews, described assembly-line conditions in which staff hurried to fill hundreds of prescriptions a day.

Wal-Mart, operator of 4,500 U.S. pharmacies, failed 43 percent of its tests. The company said it would update and improve its pharmacy alert system and train pharmacists on the changes.

Kmart failed 60 percent of the tests. Phil Keough, pharmacy president for Sears Holdings, which owns Kmart, said he was disappointed with the results. "While not happy, we also take this as an opportunity to look in the mirror and see where we can get better," he said.

Costco, a membership warehouse club whose pharmacies are open to the general public, failed 60 percent of the tests; the company declined to comment.

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The Tribune also tested two Chicago-area chains: Jewel-Osco, which failed 43 percent of the time, and Mariano's, 37 percent.

Jewel-Osco declined an interview request and instead emailed the Tribune a one-sentence written statement: "Osco pharmacists have a history of providing knowledgeable, exemplary care to our customers and their health, well-being and safety is our primary concern."

Mariano's also declined to answer questions. The chain said in a written statement: "None of our pharmacists are intentionally disregarding drug interactions or patient safety."

The chain wrote, "Our pharmacists look at each patient profile which includes patient history, allergy profile, pre-existing conditions and other factors such as age, all of which must be considered when assessing the potential for a drug interaction."

But in the Tribune tests, pharmacists at Mariano's stores rarely asked for all of that information.

Last line of defense

In the fight to protect patients from dangerous drug interactions, doctors shoulder significant responsibility. They are the ones who write the prescriptions.

But one physician may not know what another has prescribed, and research has found that doctors' knowledge about specific interactions is often poor.

In filling prescriptions, pharmacists are uniquely positioned to detect potential drug interactions, warn patients and prevent harm. Pharmacists themselves say that is one of their primary duties.

Yet little data exists about how well they perform in real-world situations.

The Tribune set out to find the answer. To select drug pairs to be used in the tests, the newspaper enlisted the help of two leading experts on drug interactions: pharmacy professors Daniel Malone of the University of Arizona and John Horn of the University of Washington. Five pairs were chosen, three of which posed life-threatening risks. Another could cause patients to pass out. A fifth included an oral contraceptive and could lead to unplanned pregnancies.

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According to the two experts, all of the drugs had been on the market for years, and the pairs presented well-established interactions that pharmacists should easily catch. "No-brainers," Horn called them.

Writing the prescriptions was Dr. Steven C. Fox, a Chicago physician who treats many elderly patients on multiple medications. He knew the risks of interactions firsthand.

Fox wrote the prescriptions in the names of 18 Tribune journalists, 15 of whom conducted tests in the field. They presented the prescriptions written in their names or, in some instances, their colleagues' names. The reporters tested 30 stores at each of seven leading chains as well as numerous independent pharmacies. Most stores were in the Chicago area; some were in Indiana, Wisconsin and Michigan.

Reporters presented the prescriptions together or a couple of days apart, then waited to see if the orders would be filled.

Deepak Chande, a former head CVS pharmacist in southwest suburban Worth, says pressure is intense to fill prescriptions quickly. (E. Jason Wambsgans / Chicago Tribune)

In Illinois, pharmacists who detect a serious interaction must contact the prescribing doctor to see if the order is correct or if an alternative therapy is available, according to the Illinois Department of Financial and Professional Regulation. Pharmacists are then supposed to alert the patient.

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Carmen Catizone, executive director of the National Association of Boards of Pharmacy, said the professional standard is clear. "Anytime there's a serious interaction, there's no excuse for the pharmacist not warning the patient about that interaction," he said.

In the Tribune study, a test was considered a pass if the pharmacist attempted to contact Fox about the interaction or warned the reporter.

Drug information leaflets placed inside the bag or stapled to the outside were not considered sufficient to warrant a pass. Illinois regulators said these materials typically are not adequate replacements for verbal warnings; some of the materials don't warn about specific interactions, and experts say patients frequently throw out the leaflets without reading them.

After the tests, reporters called many of the pharmacists to inform them of the results and to discuss the findings.

Why were so many pharmacies missing dangerous drug combinations?

Speed vs. safety

Mayuri Patel, a pharmacist at a Wal-Mart in west suburban Northlake, said she typically fills 200 prescriptions in a nine-hour shift, or one every 2.7 minutes.

At another Wal-Mart where she was trained, it was even busier, she said: "We were doing 600 a day with two pharmacists with 10-hour shifts." That works out to one prescription every two minutes.

In the Tribune tests, she caught a potentially deadly drug pair, warning the reporter at the counter: "This is a common interaction."

It is difficult to say why so many pharmacists failed the same test, but interviews and studies point to a possible explanation: the emphasis on speed.

Several stores dispensed risky drug pairs with no warning in less than 15 minutes. At a Kmart in Valparaiso, Ind., it was 12 minutes. At an independent pharmacy on the North Side, it was five.

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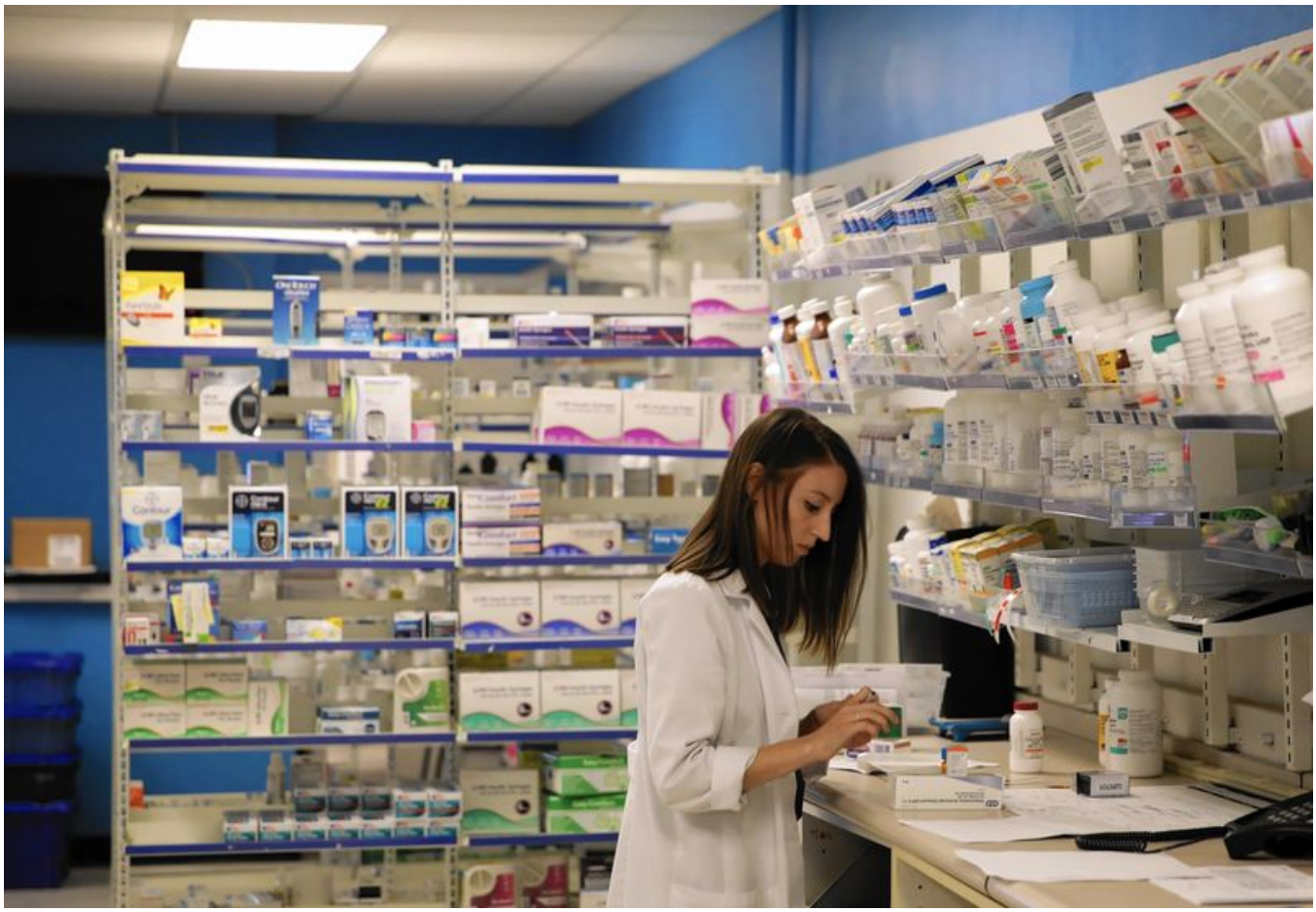
The Tribune found that pharmacists frequently race through legally required drug safety reviews — or skip them altogether. According to Illinois law, pharmacies are required to conduct several safety checks, including whether the dose is reasonable and whether the medication might interact with other drugs the patient is taking.

But in the Tribune tests, pharmacies rarely asked what other medications testers were using.

"They're cutting corners where they think they can cut," said Bob Stout, president of the New Hampshire Board of Pharmacy, which sampled data from two retail chains in the state and found that pharmacists spent an average of 80 seconds on safety checks for each prescription filled.

"What happens, I found on the board, is people stop doing (safety) reviews," Stout said. "They're not going in looking at patient records."



Pharmacist Audrey Galal recognized the danger when presented with a pair of prescriptions at the independent Mexicare Pharmacy in Chicago's Pilsen neighborhood and did not dispense the drugs. (E. Jason Wambsgans / Chicago Tribune)

Most pharmacies use computer software designed to flag drug interactions. But experts say computer alerts are so common that pharmacists can get "alert fatigue" and ignore many of the warnings.

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At the same time, chain pharmacies are increasingly promoting quick service. Drive-through windows are now common, and services like CVS' walk-in MinuteClinics appeal to consumers' preference for speed.

These efforts may send a message to patients that speed is more important than quality health care. Patients have internalized that message and feel entitled to short wait times, pharmacists said.

"The patient will get mad if you call the doctor and take time," said Sadia Shuja, a pharmacist at Skypoint Pharmacy in Schaumburg who caught a dangerous drug pair in the Tribune tests. "Sometimes they think it is fast food."

To ease workload, most pharmacies employ technicians to manage tasks that require less medical expertise.

Arsen Mysllinj, a Kmart pharmacist in Rockford who passed the Tribune test, said technicians at his store and others often screen for drug interactions after entering patients' drug orders into a computer. If interactions appear, he said, the technicians are trained to print out the warning on the screen and hand it to a pharmacist. It would be better, he said, for pharmacists to do the screening.

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Kmart said that in light of the test results, it would review its relevant policies, computer systems and training programs.

Unionized pharmacists, including those in Illinois, have periodically pushed for minimum staffing rules, but those efforts have not gone far. Some pharmacists say time spent pitching company promotions could be better spent on patient safety.

In the Tribune tests, the majority of Kmart pharmacists dispensed risky drug combinations without warning testers. But several did take time to try to enroll the reporters in the company's savings program.

'Scorecard' pressures

At CVS, prompt service isn't just a vague goal. It is a carefully measured metric that the chain uses, along with other assessments, to grade its pharmacies and rank them against one another, records and interviews show.

Several current or former CVS pharmacists criticized the practice, saying it pressures them to focus more on corporate criteria than on drug interactions and other safety checks.

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"You get stressed, and it takes your mind away from the actual prescriptions," said Chuck Zuraitis, head pharmacist at a CVS in south suburban Park Forest and a union steward for Teamsters Local 727, which represents 130 CVS pharmacists in the Chicago area. His pharmacy was not among those tested.

Performance and business metrics are common at big chain pharmacies and in other industries. Supporters say they make companies more efficient and responsive to customers.

In 2012, the nonprofit Institute for Safe Medication Practices conducted a national survey of 673 pharmacists and found that nearly two-thirds worked at stores that track the time it takes to fill prescriptions. About 25 percent worked at companies that guaranteed short wait times.

Of the pharmacists at stores that advertised quick service, 4 in 10 said they had made a medication error as a result of hurrying to fill a prescription within a set time.

In 2013, the National Association of Boards of Pharmacy called on states to prohibit, restrict or regulate company policies that measure the speed of pharmacists' work. But, the association says, little has changed in state law.

Internal CVS records obtained by the Tribune show that the company tracks numerous pharmacist tasks, including whether prescriptions are filled in the time promised to customers and whether voicemails are retrieved in a timely fashion.

"Every prescription is timed," said Deepak Chande, a former head pharmacist at a CVS in southwest suburban Worth, "and this is the worst of the pharmacist's nightmares."

If pharmacists fall behind, the backlog pops up in color on their computer screens, said Chande, also a former union steward. "It's an unreal pressure," he said. "Your mind is kind of frantically trying to obey it."

CVS officials declined to be interviewed about metrics but issued a statement and answered questions in writing. The company said prescriptions do not have to be filled quickly, but it expects pharmacists to have medications ready by the time promised to the customer.

Records show that head pharmacists receive a monthly "WeCARE Scorecard" that tracks the percentage of prescriptions filled by the times promised. The pharmacies are ranked by district, by region and nationwide.

CVS' computer system prioritizes prescriptions based on patients' requested pickup times, with preference given to customers with urgent needs — for instance, someone on his way home from the hospital after surgery. Pharmacists can reset a promised pickup time if they think it cannot be met, the company wrote.

The color indicators on computer screens are meant to help pharmacists with prioritizing their work, CVS said. The company also wrote that several years ago it removed a red indicator for prescriptions that had gone beyond the promised pickup time because pharmacists "felt the color red denoted something negative or alarming."

"We switched to an 'orange' indicator to inform a pharmacy team which prescriptions may not be ready before a customer's expected arrival time," CVS wrote.

Another CVS metric, documents show, tracks how many patients sign up for automatic refills. Zuraitis said posters on pharmacy walls record how many flu shots have been administered. "You feel like you're trying to sell people something," he said.

CVS said automatic refills help patients stay on schedule with the drugs they need to treat chronic conditions. The company said it measures the number of flu vaccinations offered to customers to help support the recommendation by the federal Centers for Disease Control and Prevention that people receive a flu shot annually.

At Walgreens, officials said the company collects business metrics as a way to monitor staffing levels and service. The firm said it does not use them in a manner that emphasizes productivity over patient safety.

Alethea Little, a Walgreens pharmacist in west suburban Forest Park who properly warned a tester, said metrics are no excuse for missing drug interactions.

"Our flu shot goal is 10 a day, 12 a day, 50 a day," she said. "And the phone rings off the hook. You just got to do what you got to do, essentially."

Squeezed by chains

Independent pharmacies face a different kind of pressure: intense competition from the big chains.

B.M. Patel, a pharmacist for 40 years who owns Riteway Pharmacy on Chicago's Northwest Side, missed the test interaction but didn't make excuses. "It was a mistake," he said. "Maybe I should be paying more attention."

But he also said small pharmacies know that if they don't fill a prescription, the customer might simply go to a nearby chain store. Business at his store, he said, "is not good. I can still survive, but not too long. We don't really know how long it's going to last."

The number of independent stores has been shrinking nationwide. In Illinois, the number dropped about 9 percent from 689 in 2013 to 624 last year, according to the National Community Pharmacists Association.

Several independents tested by the Tribune looked like classic drugstores, offering medications alongside greeting cards, stuffed animals and candy bars. Others were less inviting. One dispensed drugs behind a thick window; at another, a reporter had to knock several times to gain entry.

In Chicago's Pilsen neighborhood, independent pharmacist Audrey Galal passed her test while working at a Mexicare Pharmacy, a small storefront on a block of brick buildings. The store is in the process of closing, she said, in part because of competition from chains.

Galal said she did not think small drugstores would knowingly sell harmful medications, but they might be reluctant to turn away business.

"These pharmacists are acting like businesspeople, just trying to keep their pharmacies afloat instead of being clinicians," said Galal, who now works at a Mexicare in Little Village.

Andy Politis, a pharmacist and part owner of Oakmill Pharmacy in north suburban Niles who passed the test, said he was surprised how many independents failed. "The independent guys should be better because they don't have the same pressure as the big stores with so many prescriptions," he said.

B. Douglas Hoey, chief executive of the national community pharmacists group, said the results were alarming. "It's something that shouldn't happen — both for chains and independents," he said. "Even one is too many."

Several independents said the findings prompted them to make changes. After failing its test, Summit Medical Pharmacy in the southwest suburbs beefed up internal checks and worked with a software company to ensure that even minor drug interactions are detected.

Since then, the new system has flagged several interactions that led to consultations with doctors and patients, head pharmacist Pankaj Bhalakia said.

"We changed the whole system," he said. "I don't think there could be a problem in the future."

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Major pharmacy chains vow safety improvements

In response to the Tribune tests, some of the nation's largest pharmacy chains said they would take significant steps to improve patient safety.

CVS

CVS said it will change its policies and computer system to require pharmacists to call the prescribing doctor or warn the patient when a serious drug interaction is flagged. Those changes will apply to the chain's 30,000 pharmacists at its 9,600 drugstores.

Currently, CVS allows pharmacists to override computer alerts if they review the warning and accompanying medical literature and conclude the prescription is appropriate. In the future, the system will not allow pharmacies to dispense certain flagged medications unless the pharmacists document in the computer that they have called the doctor or counseled the patient.

CVS said its pharmacists will undergo a comprehensive training and certification program on the new rule, to be implemented early next year. The rule will apply to other safety issues, such as drug-allergy interactions, duplicative therapies and orders involving unusually high or low doses, later in the year.

To reduce "alert fatigue," CVS said it will work with its database providers to streamline alerts to help ensure that pharmacists are presented with the most important warnings.

In addition, CVS said it will change its approach to the "offer to counsel." Throughout the industry, pharmacists often address a legal requirement that pharmacies must offer to counsel patients by having staff ask customers at checkout, "Do you have any questions for the pharmacist today?" or sometimes simply, "Any questions?" CVS said it will require a more robust and explanatory communication.

CVS said the new wording has not been finalized but that the company's 50,000 technicians will be trained in the new policy.

Walgreens

Walgreens said it will provide additional training on drug interactions for its 27,000 pharmacists at its 8,175 U.S. drugstores, including the 222 pharmacies in the New York metropolitan area under the Duane Reade banner. A pharmacy staff meeting on drug interactions will be held chainwide.

To give pharmacists more time to help patients, Walgreens said it is accelerating efforts to move administrative tasks out of stores and to a centralized office.

Walgreens also said it has notified staffers of relevant policies and procedures, including that pharmacists should always counsel patients on new prescriptions.

Wal-Mart

Wal-Mart said it will update and improve its pharmacy alert system. Once that process is completed, the company's pharmacy operating manual will be amended accordingly, and Wal-Mart's 16,000 pharmacists at 4,500 stores will be required to undergo computer-based training on the changes.

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Chicago Mayor Lori Lightfoot is under pressure to change the police union contract to win reforms. Here's why that's tougher than it sounds.
JUN 20, 2020

City Hall missed 70% of deadlines in first year of reforming Chicago Police Department
JUN 19, 2020

Why 'defund the police' and other ideas for change may face a greater challenge in Chicago than in other cities
JUN 12, 2020

Court-appointed monitor will investigate allegations of Chicago police abuse of protesters
JUN 5, 2020

The company also said it will send a notification to all of its pharmacists reminding them of best practices in terms of identifying drug interactions and warning patients. Wal-Mart said it will reinforce that pharmacists should counsel all patients filling new prescriptions.

Kmart

Kmart said it is reviewing its policies, computer systems and training programs relevant to its 528 pharmacies.

The company said it is also studying whether to bolster the way it approaches the "offer to counsel" and whether to require new customers to fill out medication forms to help staff detect drug interactions.

Topics: Drug Research, Drugs and Medicines, Medical Research

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EXHIBIT 2

The New York Times https://nyti.ms/2Oiw42e

How Chaos at Chain Pharmacies Is Putting Patients at Risk

Pharmacists across the U.S. warn that the push to do more with less has made medication errors more likely. "I am a danger to the public," one wrote to a regulator.

By Ellen Gabler

Jan. 31, 2020

For Alyssa Watrous, the medication mix-up meant a pounding headache, nausea and dizziness. In September, Ms. Watrous, a 17-year-old from Connecticut, was about to take another asthma pill when she realized CVS had mistakenly given her blood pressure medication intended for someone else.

Edward Walker, 38, landed in an emergency room, his eyes swollen and burning after he put drops in them for five days in November 2018 to treat a mild irritation. A Walgreens in Illinois had accidentally supplied him with ear drops — not eye drops.

For Mary Scheuerman, 85, the error was discovered only when she was dying in a Florida hospital in December 2018. A Publix pharmacy had dispensed a powerful chemotherapy drug instead of the antidepressant her doctor had prescribed. She died about two weeks later.

The people least surprised by such mistakes are pharmacists working in some of the nation's biggest retail chains.

In letters to state regulatory boards and in interviews with The New York Times, many pharmacists at companies like CVS, Rite Aid and Walgreens described understaffed and chaotic workplaces where they said it had become difficult to perform their jobs safely, putting the public at risk of medication errors.

They struggle to fill prescriptions, give flu shots, tend the drive-through, answer phones, work the register, counsel patients and call doctors and insurance companies, they said — all the while racing to meet corporate performance metrics that they characterized as unreasonable and unsafe in an industry squeezed to do more with less.

"I am a danger to the public working for CVS," one pharmacist wrote in an anonymous letter to the Texas State Board of Pharmacy in April.

"The amount of busywork we must do while verifying prescriptions is absolutely dangerous," another wrote to the Pennsylvania board in February. "Mistakes are going to be made and the patients are going to be the ones suffering."

[Read how you can protect yourself against medication errors.]

PLAINTIFFS TRIAL EXHIBIT
P-02302_00001

State boards and associations in at least two dozen states have heard from distraught pharmacists, interviews and records show, while some doctors complain that pharmacies bombard them with requests for refills that patients have not asked for and should not receive. Such refills are closely tracked by pharmacy chains and can factor into employee bonuses.

Michael Jackson, chief executive of the Florida Pharmacy Association, said the number of complaints from members related to staffing cuts and worries about patient safety had become “overwhelming” in the past year.

CVS Health ranks eighth on the Fortune 500 list and has nearly 10,000 pharmacies across the United States. Jeenah Moon for The New York Times

The American Psychiatric Association is particularly concerned about CVS, America’s eighth-largest company, which it says routinely ignores doctors’ explicit instructions to dispense limited amounts of medication to mental health patients. The pharmacy’s practice of providing three-month supplies may inadvertently lead more patients to attempt suicide by overdosing, the association said.

“Clearly it is financially in their best interest to dispense as many pills as they can get paid for,” said Dr. Bruce Schwartz, a psychiatrist in New York and the group’s president.

A spokesman for CVS said it had created a system to address the issue, but Dr. Schwartz said complaints persisted.

Regulating the chains — five rank among the nation’s 100 largest companies — has proved difficult for state pharmacy boards, which oversee the industry but sometimes allow company representatives to hold seats. Florida’s nine-member board, for instance, includes a lawyer for CVS and a director of pharmacy affairs at Walgreens.

Aside from creating potential conflicts of interest, the industry presence can stifle complaints. “We are afraid to speak up and lose our jobs,” one pharmacist wrote anonymously last year in response to a survey by the Missouri Board of Pharmacy. “PLEASE HELP."

Officials from several state boards told The Times they had limited authority to dictate how companies ran their businesses. Efforts by legislatures in California and elsewhere have been unsuccessful in substantially changing how pharmacies operate.

A majority of state boards do not require pharmacies to report errors, let alone conduct thorough investigations when they occur. Most investigations focus on pharmacists, not the conditions in their workplaces.

In public meetings, boards in at least two states have instructed pharmacists to quit or speak up if they believe conditions are unsafe. But pharmacists said they feared retaliation, knowing they could easily be replaced.

The industry has been squeezed amid declining drug reimbursement rates and cost pressures from administrators of prescription drug plans. Consolidation, meanwhile, has left only a few major players. About 70 percent of prescriptions nationwide are dispensed by chain drugstores, supermarkets or retailers like Walmart, according to a 2019 Drug Channels Institute report.

CVS garners a quarter of the country’s total prescription revenue and dispenses more than a billion prescriptions a year. Walgreens captures almost 20 percent. Walmart, Kroger and Rite Aid fall next in line among brick-and-mortar stores.

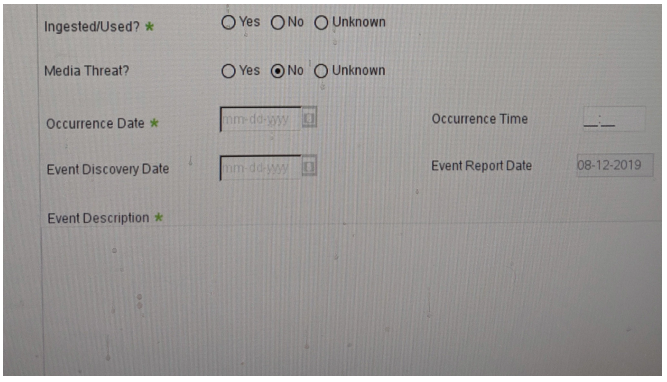
In statements, the pharmacy chains said patient safety was of utmost concern, with staffing carefully set to ensure accurate dispensing. Investment in technology such as e-prescribing has increased safety and efficiency, the companies said. They denied that pharmacists were under extreme pressure or faced reprisals.

“When a pharmacist has a legitimate concern about working conditions, we make every effort to address that concern in good faith,” CVS said in a statement. Walgreens cited its confidential employee hotline and said it made “clear to all pharmacists that they should never work beyond what they believe is advisable.”

Errors, the companies said, were regrettable but rare; they declined to provide data about mistakes.

The National Association of Chain Drug Stores, a trade group, said that “pharmacies consider even one prescription error to be one too many” and “seek continuous improvement.” The organization said it was wrong to “assume cause-effect relationships” between errors and pharmacists’ workload.

The specifics and severity of errors are nearly impossible to tally. Aside from lax reporting requirements, many mistakes never become public because companies settle with victims or their families, often requiring a confidentiality agreement. A CVS form for staff members to report errors asks whether the patient is a “media threat,” according to a photo provided to The Times. CVS said in a statement it would not provide details on what it called its “escalation process.”



A CVS form for pharmacy staff members to report errors asks whether the patient is a “media threat.”

The last comprehensive study of medication errors was over a decade ago: The Institute of Medicine estimated in 2006 that such mistakes harmed at least 1.5 million Americans each year.

Jonathan Lewis said he waited on hold with CVS for 40 minutes last summer, after discovering his antidepressant prescription had been refilled with another drug.

Mr. Lewis, 47, suspected something was wrong when he felt short of breath and extremely dizzy. Looking closely at the medication — and turning to Google — he figured out it was estrogen, not an antidepressant, which patients should not abruptly quit.

“It was very apparent they were very understaffed,” Mr. Lewis said, recalling long lines inside the Las Vegas store and at the drive-through when he picked up the prescription.

Pharmacists have written to state regulatory boards about their safety concerns.

“A fatigued and distracted pharmacist in a fast-paced, chaotic environment is much more likely to make an error. The harm from a medication error ranges from being a slight inconvenience to being fatal.”

Texas pharmacist

Too Much, Too Fast

The day before Wesley Hickman quit his job as a pharmacist at CVS, he worked a 13-hour shift with no breaks for lunch or dinner, he said.

As the only pharmacist on duty that day at the Leland, N.C., store, Dr. Hickman filled 552 prescriptions — about one every minute and 25 seconds — while counseling patients, giving shots, making calls and staffing the drive-through, he said. Partway through his shift the next day, in December 2018, he called his manager.

Wesley Hickman, who now runs an independent pharmacy, left a job at CVS because of conditions he described as unsafe. Jeremy M. Lange for The New York Times

“I said, ‘I am not going to work in a situation that is unsafe.’ I shut the door and left,” said Dr. Hickman, who now runs an independent pharmacy.

Dr. Hickman felt that the multitude of required tasks distracted from his most important jobs: filling prescriptions accurately and counseling patients. He had begged his district manager to schedule more pharmacists, but the request was denied, he said.

CVS said it could not comment on the “individual concerns” of a former employee.

With nearly 10,000 pharmacies across the country, CVS is the largest chain and among the most aggressive in imposing performance metrics, pharmacists said. Both CVS and Walgreens tie bonuses to achieving them, according to company documents.

Nearly everything is tracked and scrutinized: phone calls to patients, the time it takes to fill a prescription, the number of immunizations given, the number of customers signing up for 90-day supplies of medication, to name a few.

The fact that tasks are being tracked is not the problem, pharmacists say, as customers can benefit from services like reminders for flu shots and refills. The issue is that employees are heavily evaluated on hitting targets, they say, including in areas they cannot control.

In Missouri, dozens of pharmacists said in a recent survey by the state board that the focus on metrics was a threat to patient safety and their own job security.

“Metrics put unnecessary pressure on pharmacy staff to fill prescriptions as fast as possible, resulting in errors,” one pharmacist wrote.

Of the nearly 1,000 pharmacists who took the survey, 60 percent said they “agree” or “strongly agree” that they “feel pressured or intimidated to meet standards or metrics that may interfere with safe patient care.” About 60 percent of respondents worked for retail chains, as opposed to hospitals or independent pharmacies.

Surveys in Maryland and Tennessee revealed similar concerns.

The specific goals are not made public, and can vary by store, but internal CVS documents reviewed by The Times show what was expected in some locations last year.

Staff members were supposed to persuade 65 percent of patients picking up prescriptions to sign up for automatic refills, 55 percent to switch to 90-day supplies from 30-day, and 75 percent to have the pharmacy contact their doctor with a “proactive refill request” if a prescription was expiring or had no refills, the documents show.

Prescriptions at Dr. Hickman's pharmacy. When he worked at CVS, he said, longtime patients sometimes signed up for automatic refills as a favor to help him meet corporate metrics. Jeremy M. Lange for The New York Times

Pharmacy staff members are also expected to call dozens of patients each day, based on a computer-generated list. They are assessed on the number of patients they reach, and the number who agree to their requests.

Representatives from CVS and Walgreens said metrics were meant to provide better patient care, not penalize pharmacists. Some are related to reimbursements to pharmacies by insurance companies and the government. CVS said it had halved its number of metrics over the past 18 months.

But dozens of pharmacists described the emphasis on metrics as burdensome, and said they faced backlash for failing to meet the goals or suggesting they were unrealistic or unsafe.

“Any dissent perceived by corporate is met with a target placed on one’s back,” an unnamed pharmacist wrote to the South Carolina board last year.

In comments to state boards and interviews with The Times, pharmacists explained how staffing cuts had led to longer shifts, often with no break to use the restroom or eat.

“I certainly make more mistakes,” another South Carolina pharmacist wrote to the board. “I had two misfills in three years with the previous staffing and now I make 10-12 per year (that are caught).”

Much of the blame for understaffing has been directed at pressure from companies that manage drug plans for health insurers and Medicare.

Acting as middlemen between drug manufacturers, insurers and pharmacies, the companies — known as pharmacy benefit managers, or P.B.M.s — negotiate prices and channel to pharmacies the more than $300 billion spent on outpatient prescription drugs in the United States annually.

The benefit managers charge fees to pharmacies, and have been widely criticized for a lack of transparency and applying fees inconsistently. In a letter to the Department of Health and Human Services in September, a bipartisan group of senators noted an “extraordinary 45,000 percent increase” in fees paid by pharmacies from 2010 to 2017.

While benefit managers have caused economic upheaval in the industry, some pharmacy chains are players in that market too: CVS Health owns CVS Caremark, the largest benefit manager; Walgreens Boots Alliance has a partnership with Prime Therapeutics; Rite Aid owns a P.B.M., too.

Walgreens draws nearly 20 percent of the United States' total prescription revenue. Jeenah Moon for The New York Times

The Pharmaceutical Care Management Association, the trade group representing benefit managers, contends that they make prescriptions more affordable, and pushes back against the notion that P.B.M.s are responsible for pressures on pharmacies, instead of a competitive market.

Pharmacists have written to state regulatory boards about their safety concerns.

"I'm confident that I've had dispensing errors which have left my pharmacy, but I was working too fast in order to meet our precious metrics to notice them. Let's hope nobody suffered or died because of it."

Missouri pharmacist

Falling Through the Cracks

Dr. Mark Lopatin, a rheumatologist in Pennsylvania, says he is inundated with refill requests for almost every prescription he writes. At times Dr. Lopatin prescribes drugs intended only for a brief treatment — a steroid to treat a flare-up of arthritis, for instance.

But within days or weeks, he said, the pharmacy sends a refill request even though the prescription did not call for one. Each time, his office looks at the patient's chart to confirm the request is warranted. About half are not, he said.

Aside from creating unnecessary work, Dr. Lopatin believes, the flood of requests poses a safety issue. "When you are bombarded with refill after refill, it's easy for things to fall through the cracks, despite your best efforts," he said.

Pharmacists told The Times that many unwanted refill requests were generated by automated systems designed in part to increase sales. Others were the result of phone calls from pharmacists, who said they faced pressure to reach quotas.

In February, a CVS pharmacist wrote to the South Carolina board that cold calls to doctors should stop, explaining that a call was considered "successful" only if the doctor agreed to the refill.

"What this means is that we are overwhelming doctor's office staff with constant calls, and patients are often kept on medication that is unneeded for extended periods of time," the pharmacist wrote.

CVS says outreach to patients and doctors can help patients stay up-to-date on their medications, and lead to lower costs and better health.

Dr. Rachel Poliquin, a psychiatrist in North Carolina who says she constantly gets refill requests, estimates that about 90 percent of her patients say they never asked their pharmacy to contact her.

While Dr. Poliquin has a policy that patients must contact her directly for more medication, she worries about clinics where prescriptions may get rubber-stamped in a flurry of requests. Then patients — especially those who are elderly or mentally ill — may continue taking medication unnecessarily, she said.

The American Psychiatric Association has been trying to tackle a related problem after hearing from members that CVS was giving patients larger supplies of medication than doctors had directed.

While it is common for pharmacies to dispense 90 days' worth of maintenance medications — to treat chronic conditions like high blood pressure or diabetes — doctors say it is inappropriate for other drugs.

For example, patients with bipolar disorder are often prescribed lithium, a potentially lethal drug if taken in excess. It is common for psychiatrists to start a patient on a low dose or to limit the number of pills dispensed at once, especially if the person is considered a suicide risk.

But increasingly, the psychiatric association has heard from members that smaller quantities specified on prescriptions are being ignored, particularly by CVS, according to Dr. Schwartz, the group's president.

CVS has created a system where doctors can register and request that 90-day supplies not be dispensed to their patients. But doctors report that the registry has not solved the problem, Dr. Schwartz said. In a statement, CVS said it continued to "refine and enhance" the program.

Dr. Charles Denby, a Rhode Island psychiatrist, said CVS ignored his explicit directions not to dispense 90-day supplies of medication to patients. Tony Luong for The New York Times

Even after he began stamping the instructions on prescriptions, he said, CVS would tell him the "baldfaced lie" that his patients were asking for 90-day supplies. Dr. Denby's D.E.A. number has been redacted. Tony Luong for The New York Times

Dr. Charles Denby, a psychiatrist in Rhode Island, became so concerned by the practice that he started stamping prescriptions, "AT MONTHLY INTERVALS ONLY." Despite those explicit instructions, Dr. Denby said, he received faxes from CVS saying his patients had asked for — and been given — 90-day supplies.

Dr. Denby, who retired in December, said it was a "baldfaced lie" that the patients had asked for the medication, providing statements from patients saying as much.

"I am disgusted with this," said Dr. Denby, who worries that patients may attempt suicide with excess medication. "There are going to be people dead only because they have enough medication to do the deed with."

'We Already Have Systems in Place'

Alton James never learned how the mistake came about that he says killed his 85-year-old mother, Mary Scheuerman, in 2018.

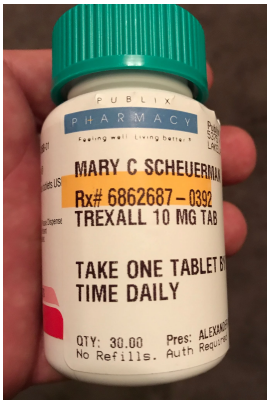
He knows he picked up her prescription at the pharmacy in a Publix supermarket in Lakeland, Fla. He knows he gave her a pill each morning. He knows that after six days, she turned pale, her blood pressure dropped and she was rushed to the hospital.

Mary Scheuerman died in December 2018 after taking a powerful chemotherapy drug mistakenly dispensed by a Publix pharmacy. Her son said she was supposed to have received an antidepressant.

Mr. James remembers a doctor telling him his mother's blood had a toxic level of methotrexate, a drug often used to treat cancer. But Mrs. Scheuerman didn't have cancer. She was supposed to be taking an antidepressant. Mr. James said a pharmacy employee later confirmed that someone had mistakenly dispensed methotrexate.

Five days after entering the hospital, Mrs. Scheuerman died, with organ failure listed as the lead cause, according to medical records cited by Mr. James.

The Institute for Safe Medication Practices has warned about methotrexate, listing it as a “high-alert medication” that can be deadly when taken incorrectly. Mr. James reported the pharmacy’s error to the group, writing that he wanted to raise awareness about the drug and push Publix, one of the country’s largest supermarket chains, to “clean up” its pharmacy division, according to a copy of his report provided to The Times.



Trexall, a brand name for the drug methotrexate, can be used to treat cancer.

The company acknowledged the mistake and offered a settlement, Mr. James wrote, but would not discuss how to avoid future errors, saying, “We already have systems in place.”

Last September, Mr. James told The Times that Publix wanted him to sign a settlement agreement that would prevent him from speaking further about his mother’s death. Mr. James has since declined to comment, saying that the matter was “amicably resolved.”

A spokeswoman for Publix said privacy laws prevented the company from commenting on specific patients.

It can be difficult for patients and their families to decide whether to accept a settlement.

Last summer, CVS offered to compensate Kelsey and Donavan Sullivan after a pediatrician discovered the reflux medication they had been giving their 4-month-old for two months was actually a steroid. To be safely weaned, the baby had to keep taking it for two weeks after the error was discovered.

“It was like he was coming out of a fog,” Mrs. Sullivan recalled.

Kelsey and Donavan Sullivan with their son, Finnegan. Last year, a CVS mistakenly dispensed a steroid for the baby in place of reflux medication. Nina Robinson for The New York Times

The couple, from Minnesota, are still considering a settlement but haven't agreed to anything because they don't know what long-term consequences their son might face.

The kinds of errors and how they occur vary considerably.

The paper stapled to a CVS bag containing medication for Ms. Watrous, the Connecticut teenager with asthma, listed her correct name and medication, but the bottle inside had someone else's name.

Directions on the prescription for Mr. Walker, the Illinois man who got ear drops instead of eye drops from Walgreens, were clear: "Instill 1 drop in both eyes every 6 hours." He later saw the box: "For use in ears only."

In September, Stefanie Davis, 31, got the right medicine, Adderall, but the wrong dose. She pulled over on the interstate after feeling short of breath and dizzy with blurred vision. The pills, dispensed by a Walgreens in Sun City Center, Fla., were each 30 milligrams instead of her usual 20. She is fighting with Walgreens to cover a $900 bill for her visit to an emergency room.

Fixes That Fall Short

State boards and legislatures have wrestled with how to regulate the industry. Some states have adopted laws, for instance introducing mandatory lunch breaks or limiting the number of technicians a pharmacist can supervise.

But the laws aren't always followed, can be difficult to enforce or can fail to address broader problems.

The National Association of Chain Drug Stores says some state boards are blocking meaningful change. The group, for instance, wants to free up pharmacists from some tasks by allowing technicians, who have less training, to do more.

It also supports efforts to change the insurance reimbursement model for pharmacies. Health care services provided by pharmacists to patients, such as prescribing birth control, are not consistently covered by insurers or allowed in all states. But it has been difficult to find consensus to change federal and state regulations.

While those debates continue, some state boards are trying to hold companies more accountable.

For Mrs. Sullivan's infant to safely wean off the high-dose steroid he was given by mistake, he had to keep taking it for two weeks after the error was discovered. Nina Robinson for The New York Times

Often when an error is reported to a board, action is taken against the pharmacist, an obvious target. It is less common for a company to be scrutinized.

The South Carolina board discussed in November how to more thoroughly investigate conditions after a mistake. It also published a statement discouraging quotas and encouraging "employers to value patient safety over operational efficiency and financial targets."

California passed a law saying no pharmacist could be required to work alone, but it has been largely ignored since taking effect last year, according to leaders of a pharmacists' union. The state board is trying to clarify the law's requirements.

In Illinois, a new law requires breaks for pharmacists and potential penalties for companies that do not provide a safe working environment. The law was in response to a 2016 Chicago Tribune investigation revealing that pharmacies failed to warn patients about dangerous drug combinations.

Some states are trying to make changes behind closed doors. After seeing results of its survey last year, the Missouri board invited companies to private meetings early this year to answer questions about errors, staffing and patient safety.

CVS and Walgreens said they would attend.

Research was contributed by Susan C. Beachy, Jack Begg, Alain Delaquérière and Sheelagh McNeill.